I, Wolfgang Herzing, hereby solemnly declare as follows:

After my studies and the degree as a chemical engineer (1984 to 1990) at the Friedrich-Alexander University Erlangen - Nürnberg I have been and remain an employee of Eckart GmbH & Co. KG.

In 1990 I started in the engineering office as a project engineer designing the basic and detail engineering of our pigment production sites.

In 1995 I changed to the research and development department optimizing metallic pigment products and the corresponding production processes. A main topic was the improvement of the corresponding process technologies, such as atomizing, milling, classifying and so on.

At the end of that period, several major projects in the field of pearlescent pigments followed and I was principally involved in the integration of new optimized processing technologies of the acquired pearlescent pigment production site in Finland.

Subsequent to these projects I started in 1999 working and investigating on PVD coatings and I am now responsible for the PVD research in our company. During that time the following inventions in the field of PVD pigments were made:

1. DARK METAL EFFECT PIGMENTS PRODUCED BY MEANS OF A PHYSICAL VAPOUR DEPOSITION (PVD) METHOD
   (WO 2007093401)

2. COPPER-BASED METAL FLAKES, IN PARTICULAR COMPRISING ZINC AND METHOD FOR PRODUCTION THEREOF
   (WO 2004026971)

3. MULTILAYERED EFFECT PIGMENT COMPRISING A CENTRAL ABSORBER LAYER, METHOD FOR THE PRODUCTION THEREOF, USE OF THE SAME, COATING AGENT AND COATED OBJECT
   (WO 2006069663)

I am very familiar and experienced with PVD coatings and I declare the following:

The PVD-pigments of the present invention differ from conventional ball milled copper-based pigments in terms of the resulting shape of the breaking edges, a different surface structure and the characteristic columnar growth morphology.

Conventional copper-based ball milled pigments were distinguished into two groups of pigment types, depending on the production process they were made of:

A "cornflake" or a "dollar" type

"Dollar" form appears when the atomized powder is only formed into a flake like form, meaning a single powder particle is just flattened, not comminuted and particle sized, hence no more particles were generated. The resulting pigments look like a coin with nearly no damaged edges and a circular form.

"Cornflake" like pigments were achieved when the pigment processing is a continuous process of flattening and particle comminuting of the single powder particle. During the process many pigments result out of a single starting particle by repeating the steps of grinding and flattening. This procedure leads to pigments with fissured flanks and fringy edges.

The surface of the "cornflake" like pigment is formed mechanically thus showing vestiges of the mechanical deformation. Additionally, during the reiterating process of flattening and particle sizing many of the generated particles can be found cold fusion-welded, meaning sintered together on the surface of the "cornflake" like pigments. Therefore, this procedure results in an uneven surface and a varying layer thickness.

In contrary, PVD-pigments are generated by condensation of a metal vapor onto a carrier resulting in a metallic film of defined and uniform thickness. After stripping from the carrier, the metallic film is comminuted into pigment particles. As a result of this process, the PVD-pigments of the present invention differ from conventional ball milled copper-based pigments in terms of the resulting shape of the breaking edges, a different surface structure and the characteristic columnar growth morphology.

The surface of PVD-pigments, which was not subject of mechanical deformation, differ from circular coin-like "dollar" type or "cornflake" type by their plane, mirror-like faces. Furthermore, PVD-pigments have an appreciable amount of straight edges.

The differences of PVD-pigments and conventional ball milled copper-based pigments of the "cornflake" type in terms of the shape of the breaking edges and the surface structure is demonstrated by the enclosed scanning electron microscope (SEM) images.

	data file	**magnification**
pigments of the present invention:		
obtained by a PVD-process	SG 260905-1 30 min T_5kx_02	5000
	SG 260905-1 30 min T_500x_01	500
commercially available gold bronze pigment ("cornflake" type):		
obtained by	BG Roto 6_50kx_01	50000
a conventional milling-process	BG Roto 6_5kx_05	5000
	BG Roto 6_2kx_04	2000

The SEM-images depicting a commercially available gold bronze pigment of the "cornflake" type obtained by a milling-process clearly show that these pigments have an uneven surface with a varying layer thickness resulting from the above-mentioned mechanical deformation and the cold fusion-welding process. The SEM-images also clearly show that these pigments have fissured flanks and fringed breaking-edges.

In contrary, the SEM-images depicting the pigments of the present invention clearly show their plane, mirror-like faces and their defined and uniform thickness resulting from the vacuum deposition process. Furthermore, the straight braking edges are also visible.

Furthermore a basic phenomenon of PVD pigments is revealed:
The special columnar growth morphology (structure zone model of growth) which is special for PVD pigments. This columnar structure of the fracture surface is unique and is found as result of the evaporating process whether the material is crystalline or amorphous.

To briefly summarize, pigments obtained by a vacuum deposition process exhibit plane, mirror-like faces with uniform thickness and straight breaking edges, whereas "cornflake" type pigments obtained by milling are characterized by their fissured flanks, fringed breaking-edges and mechanically formed surfaces showing vestiges of the mechanical deformation and a varying layer thickness, compared to PVD-pigments.

Effect pigments obtained by a PVD-process have improved optical properties compared to effect pigments obtained by ball milling. Due to their plane, mirror-like faces and uniform thickness effect pigments obtained by a PVD-process exhibit a high reflectability and brilliance.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true. I further declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statement may jeopardize the validity of the application or any patent issued thereon.

Date: 14.11.2008 Signature: